

Chapter 10: Muscular System: Gross Anatomy

I. General Principles

A. General Terminology

1. Tendons attach _____
2. What is an aponeurosis? _____
3. The points of muscle attachment are called _____ & _____
4. How is the "origin" defined? _____
5. How is the "insertion" defined? _____
6. What is the "belly" of a muscle? _____
7. What is an agonist? _____
8. What does an antagonist muscle do? _____
9. Muscles that work together to create a movement are called _____
10. What is a "prime mover"? _____
11. What does a "fixator" do? _____

B. Muscle Shapes

1. The shape and size of any given muscle greatly influences:
 - a. Degree _____ &
 - b. Amount _____
2. Describe the pennate arrangement of muscle fasciculi: _____

 - a. What does unipennate mean? _____
 - b. How are fasciculi arranged in a bipennate muscle? _____
 - c. What is a multipennate muscle shape? _____
3. Describe the parallel arrangement of muscle fasciculi: _____

 - a. This arrangement allows them to _____ than pennate
 - b. How does the force of contraction in parallel muscles compare to that in pennate muscles? _____
 1. What accounts for this difference? _____
4. Describe the convergent arrangement of muscle fasciculi: _____

- a. This results in a _____ shape to the muscle
 - b. How does the force of contraction compare to a parallel muscle? _____
5. Describe the circular arrangement of muscle fasciculi: _____
- _____
- a. These muscles act as a _____ to close the _____
6. List the specific shapes that a muscle may have: (Use Figure 10.2 as needed)
- a. _____
 - b. _____
 - c. _____
 - d. _____
 - e. _____
7. What does digastric mean? _____
8. What does bicipital mean? _____

C. Nomenclature

1. Define the following terms, which may be associated with muscle names:
 - a. Location terms:
 1. Pectoralis _____
 2. Gluteus _____
 3. Brachial _____
 - b. Size terms:
 1. Maximus _____
 2. Minimus _____
 3. Longus _____
 4. Brevis _____
 - c. Shape terms:
 1. Deltoid _____
 2. Quadratus _____
 3. Teres _____
 - d. Orientation terms:
 1. Rectus _____
 2. Oblique _____

e. Origin and Insertion terms:

1. May simply be the names of the bones:

a. Sterno- _____

b. Cleido- _____

c. Mastoid _____

2. Brachium _____

f. Terms associated with number of heads:

1. Biceps _____

2. Triceps _____

g. Function terms:

1. Abductor _____

2. Adductor _____

3. Masseter _____

D. Movements Accomplished by Muscles

1. The force of muscle contraction is called _____

a. This force is applied to _____ resulting in _____

2. Define the term lever: _____

3. Define the term fulcrum: _____

4. The force of a body part that has to be moved is called _____

5. Which body structure represents the following parts of a lever system:

a. Fulcrum _____

b. Lever _____

c. Pull _____

6. In a class I lever system the fulcrum is located _____

a. An example of this system in the human body would be: _____

7. In a class II lever system the fulcrum is located _____

a. An example of this system in the human body would be: _____

8. In a class III lever system the pull is located _____

- a. An example of this system in the human body would be: _____

9. Which class of lever system is most common in the body? _____

II. Head Muscles

A. Head and Neck Muscles

1. Flexors of the head and neck _____
2. Posterior neck muscles are involved in _____
3. Rotation and abduction of the head are accomplished by muscles of:
- a. _____ &
b. _____
4. The sternocleidomastoid muscle is the _____ of the _____
- a. What movement occurs if only the left sternocleidomastoid is contracted?

- b. What movement occurs if both are contracted? _____

B. Facial Expression

1. What are the muscles of the face attached to? _____
2. What does the occipitofrontalis do? _____
3. What muscle closes the eyes? _____
4. What muscle raises the upper eyelid? _____
- a. What causes ptosis of an eyelid? _____
5. List the muscles involved in kissing:
- a. _____
b. _____
6. List the muscles involved in smiling:
- a. _____
b. _____
c. _____
d. _____

7. What muscle is involved in sneering? _____

8. List the muscles involved in frowning:

a. _____

b. _____

c. _____

C. Mastication

1. Chewing involves forcefully _____ the mandible as well as _____ and _____ excursion of the mandible.

2. Which muscles involved in mastication are some of the strongest muscles of the body? _____

D. Tongue Movements

1. List the roles the tongue plays in mastication and speech:

a. _____

b. _____

c. _____

d. _____

2. Functionally intrinsic muscles of the tongue _____

3. Functionally extrinsic muscles _____

4. Intrinsic muscles are named for _____

5. Extrinsic muscles are named for _____

E. Swallowing and the Larynx

1. Describe how the hyoid muscles can depress the mandible: _____

2. Describe how the hyoid muscles can elevate the larynx: _____

3. What muscles are constricted for swallowing?

a. _____

b. _____

4. What muscle is important for equalizing pressure within the middle ear?

a. _____

F. Movements of the Eyeball

1. The superior rectus moves the eyeball so you look _____
2. The inferior rectus moves the eyeball so you look _____
3. The lateral rectus moves the eyeball so you look _____
4. The medial rectus moves the eyeball so you look _____
5. The superior oblique moves the eyeball so you look _____
6. The inferior oblique moves the eyeball so you look _____

III. Trunk Muscles

A. Muscles Moving the Vertebral Column

1. Muscles of the deep group extend from _____ to _____
2. Muscles of the superficial group extend from _____ to _____
3. List the three subgroups that form the erector spinae group of muscles:
 - a. _____
 - b. _____
 - c. _____
 1. Which subgroup accounts for most of the muscle mass in the lower back? _____

B. Thoracic Muscles

1. Which muscles elevate the ribs during inspiration?
 - a. _____
 - b. _____
2. Which muscles depress the ribs during forced expiration?
 - a. _____
 - b. _____
3. What is the shape of the diaphragm? _____
 - a. How does its shape change when it contracts? _____

C. Abdominal Wall

1. Anterior abdominal muscles _____ & _____ the vertebral column
2. When the vertebral column is fixed they aid in such functions as:
 - a. Forced _____

- b. _____
 - c. _____
 - d. _____
 - e. _____
3. What is the linea alba? _____
 4. The muscle on either side of the linea alba is called _____
 5. What are tendinous intersections? _____
 6. What is the linea semilunaris? _____
 7. List the three layers of abdominal muscles from superficial to deep:
 - a. _____
 - b. _____
 - c. _____

D. Pelvic Floor and Perineum

1. What two muscles form most of the pelvic floor (pelvic diaphragm)?
 - a. _____
 - b. _____
2. What is the perineum? _____
 - a. The anterior half is called _____
 - b. The posterior half is called _____
3. What two muscles make up the urogenital diaphragm?
 - a. _____
 - b. _____

IV. Upper Limb Muscles

A. Scapular Movements

1. List the muscles attaching the scapula to the thorax:
 - a. _____
 - b. _____
 - c. _____
 - d. _____
 - e. _____

- f. _____
2. These muscles also move the scapula or act as _____
- B. Arm Movements**
1. List the two muscles that attach the arm to the thorax:
- a. _____
- b. _____
2. List the three movements of the shoulder made by the deltoid muscle:
- a. _____
- b. _____
- c. _____
3. Collectively the muscles that hold the head of the humerus in the glenoid fossa are called _____
- C. Forearm Movements**
1. Extension of the elbow is due to contraction of:
- a. _____
- b. _____
2. Flexion of the elbow is due to contraction of:
- a. _____
- b. _____
3. Supination of the forearm is due to contraction of:
- a. _____
- b. _____
4. Pronation of the forearm is due to contraction of:
- a. _____
- b. _____
- D. Wrist, Hand, and Finger Movements**
1. Most of the anterior forearm muscles cause _____
2. Most of the posterior forearm muscles cause _____
3. What is the retinaculum? _____
4. List the two anterior muscles that flex the wrist:
- a. _____

- b. _____
5. List the three posterior muscles that extend the wrist:
- a. _____
- b. _____
- c. _____
6. List the muscles involved in flexion of the digits (excluding the thumb):
- a. _____
- b. _____
7. List the muscles involved in extension of the digits (excluding the thumb):
- a. _____
- b. _____
- c. _____
8. List the muscles involved in movement of the thumb:
- a. _____
- b. _____
- c. _____
9. List the intrinsic hand muscles responsible for abduction of the fingers:
- a. _____
- b. _____
10. Which intrinsic muscle is responsible for adduction of the fingers?
- a. _____
11. What muscles form the "thenar eminence"?
- a. _____
- b. _____
- c. _____
12. What muscles form the "hypothenar eminence"?
- a. _____
- b. _____
- c. _____
13. Muscles of the thenar eminence are involved in control of the _____
14. Muscles of the hypothenar eminence are involved in control of the _____

V. Lower Limb Muscles

A. Thigh Movements

1. List the two anterior muscles that flex the hip:
 - a. _____
 - b. _____
 1. These two muscles are collectively referred to as _____
 2. When the thigh is fixed these muscles _____
2. List the four posterolateral muscles of the hip: (Use Table 10.18 as needed)
 - a. _____
 - b. _____
 - c. _____
 - d. _____
 1. These muscles all _____ & _____ the thigh either laterally or medially
 2. In addition the gluteus maximus _____ the hip
 3. The tensor fasciae latae also _____ the hip
3. Functionally the deep hip muscles are _____
4. Which muscles tilt the pelvis during walking? _____ & _____
5. Define the hip movements caused by the following groups of thigh muscles:
 - a. Anterior thigh muscles _____
 - b. Posterior thigh muscles _____
 - c. Medial thigh muscles _____

B. Leg Movements

1. Anterior Thigh Muscles
 - a. List the muscles that make up the quadriceps femoris group:
 1. _____
 2. _____
 3. _____
 4. _____
 - a. Functionally this group of muscles _____

- b. In addition the rectus femoris _____
- b. Functionally the sartorius:
1. Flexes _____
 2. Laterally _____
2. Medial thigh muscles are involved in _____ of the thigh
- a. In addition, the gracilis _____
3. Posterior Thigh Muscles
- a. List the muscles that compose the hamstrings:
 1. _____
 2. _____
 3. _____
 - a. Functionally these muscles all _____ the knee and _____ the leg either laterally or medially
 - b. In addition, the semitendinosus _____ the hip
- C. Ankle, Foot, and Toe Movements
1. The anterior leg muscles are _____ muscles involved in
 - a. _____ & _____ or _____ of the foot &
 - b. _____ of the toes
 2. Functionally the superficial muscles on the back of the leg _____
 - a. These muscle all attach to the common _____ or _____ tendon
 - b. They include:
 1. The muscles that form the bulge of the calf:
 - a. _____
 - b. _____
 2. The small _____ muscle
 3. What is the function of the deep muscles of the posterior leg compartment?

 4. What is the function of the lateral leg muscles? _____